

ART. I.—*New Australian Tabanidae, with Notes on
Previously Described Species.*

By E. W. FERGUSON, M.B., Ch.M.

(With Plates I, II., and 4 Text Figures.)

[Read 12th March, 1920.]

The material on which this paper is founded is derived from several sources: A number of the new species are from a collection of *Tabanidae* forwarded to me from the National Museum, Melbourne, for identification; others are from Mr. Hardy's collection, mainly Tasmanian, but including a few Western Australian forms; the remainder are from the collection of the Department of Public Health, New South Wales.

It was hoped when the paper was undertaken to have revised the whole of the species comprised in the hairy-eyed group of *Tabanus*, but the completion of this work would probably delay this paper unnecessarily, and it seems better that the descriptions of the new species should be published as soon as possible.

Most of the material under study being from the Southern portion of Australia, types that I regard as of Antarctic origin predominate. To my mind our Australian Tabanid fauna has been derived from two sources—(1) Malayan, from which come species belonging to *Corizoncurea*, *Silvius* and *Tabanus* (excluding the hairy-eyed group); (2) Antarctic, from which source have probably been derived our Southern Tabanid fauna, including the genera *Diatomineura*, *Erephopsis*, *Pelecorrhynchus* and the hairy-eyed group of *Tabanus* (*Theriopectes*).

The distinction between *Diatomineura* and *Erephopsis* is by no means constant, the two genera are merely separated on the point of distinction involved in the opening or closure of the first posterior cell. In many species of *Erephopsis* in which the cell is usually closed examples are readily found in which it is open. On the other hand this cell may be closed in individuals belonging to many species of *Diatomineura*, in which the cell is habitually open.

I am indebted to Miss Phyllis F. Clarke for the illustrations that accompany this paper.

SUBFAMILY PANGONINAE.

PELECORRHYNCHUS FUSCONIGER, Walker.

List. Dipt. i., p. 192 (1848); Ricardo, Ann. Mag. Nat. Hist. (8), V., p. 407 (1910).

A male in the National Museum from Buffalo Mountains, Victoria, differs from Miss Ricardo's description in having bright red hair at sides of thorax above wing roots. In a specimen from Stradbroke Island, Queensland (collected by H. Hacker, kindly given me by G. F. Hill) these hair tufts are bright golden yellow. The thorax in the Victorian specimen is also browner in colour. In both specimens there is a narrow grey line on each side of median area of thorax, in anterior half only in the Victorian specimen, in the Queensland specimen extending to posterior border, but widening out and becoming less distinct posteriorly.

PELECORRHYNCHUS FULVUS, Ricardo.

Ricardo, loc. cit., p. 406.

Two pairs agreeing with Miss Ricardo's description have recently been given me by Mr. H. W. Davey, from Bright, Victoria.

One of the females differs from the other in the deeper reddish tint of the russet colouring of thorax and abdomen, and in having the first abdominal segment dark reddish brown instead of unicolorous with the rest of the abdomen. The differences are hardly specific. The two males agree with the other female, though both are smaller. As the male does not appear to have been described I append a short description.

♂ Long:—12.5 mm.

Face, black with black hairs, cheeks with long white hairs. Eyes widely separated, the forehead as wide as in female. Thorax and scutellum as in female. Abdomen shining black, first segment with long grey pubescence, the remainder with depressed black pubescence, sides of segments with fringe of white hair tufts. Legs and wings as in female.

In one of the males there are a very few reddish hairs intermingled with the black pubescence.

PELECORRHYNCHUS CLARIPENNIS, Ricardo.

Ricardo, loc. cit., p. 408.

Two females under examination appear to belong to this species. The front, however, is not narrowed to vertex, the

thorax is brown with suberect black hairs and with scattered depressed reddish pubescence; in one female there is a very fine greyish line present on each side of median area (the other specimen has the thorax discoloured); the breast has reddish, not black, hairs; the wings are faintly tinged grey. In other respects the specimens agree with Miss Ricardo's description.

Hab.:—Victoria, Warburton (J. E. Dixon, Dec., 1918; Spry, 15/12/18).

PELECORRHYNCHUS FLAVIPENNIS, n.sp. (Plate I.)

A large black species with yellow submedian thoracic vittae, yellow wings spotted with brown, and bicolorous legs.

♂ Long:—17 mm.

Black. Face clothed with dark grey tomentum and long black hairs, with a few whitish hairs below; beard white behind, black in front; palpi clothed with long black hairs. Antennae bright reddish yellow, the basal two joints black. Eyes barely touching in middle. Posterior surface of head clothed with dense white pubescence, the upper margin with black.

Thorax black with a conspicuous yellow line on each side of median area, and a very short, less conspicuous line above wing roots; pubescence black, with hoary white tufts of hairs behind wing roots, shoulders grey with black hairs, becoming hoary below; sides with dense hair tufts, black in front, hoary posteriorly beneath wing roots. Scutellum black in centre, grey at sides, clothed with black pubescence and fringed with hoary white hairs at each side and with black in middle.

Abdomen shining black, with depressed black pubescence and long black hairs along lateral margins of segments. Venter shining black, lateral margins with hoary white hair tufts.

Legs with femora black, tibiae and tarsi bright yellow. Wings bright yellow with dark brown markings (1) along posterior border, extending to apex; (2) across base of discal cell, not reaching anterior margin but connected with (1); (3) at apex of discal cell connected with (1); (4) a single isolated spot above apex of discal cell on second longitudinal vein; (5) at apex, where there are three semi-confluent spots, connected with dark markings of posterior border.

♀ Long:—13 mm.

Face strongly protuberant, clothed with brown tomentum, with grey tomentum below, and a patch of yellowish tomentum on each side of middle above, with

long moderately dense black hairs. Palpi very short, with second joint black below, reddish yellow above, clothed with long black hairs, apex not pointed, with a rather deep concave depression above, set somewhat obliquely. Antennae as in male. Eyes rather widely separated; the forehead practically square, clothed with dark brown tomentum in centre, bordered on each side with yellow, set with black hairs; ocelli on a definite raised tubercle. Thorax and abdomen as in male. Legs and wings coloured as in male.

Hab.:—Victoria, Fern Tree Gully (F. Spry, 10/12/04); Launching Place (G. Coghill, 21/1/08).

Types in National Museum, Melbourne.

The length given for the female is probably an under-estimate, as the tip of the abdomen is bent to a considerable extent.

This species differs widely from all others known to me, with the exception of a species from the Blue Mountains, New South Wales. This latter, a description of which is shortly to be published by Mr. G. H. Hardy, agrees with *P. flavipennis* in the coloration of the wings, but differs in the thorax and legs.

EREPHOPSIS CLELANDI, n. sp.

Allied to *E. macroporum*, and with similarly marked wings, but differing in the palpi.

♀ Long:—11 mm.

Face and cheeks covered with brown tomentum with rather sparse black pubescence; beard white; palpi dark brown, second joint short, broad, bluntly pointed, deeply concave on outer surface; antennae dark reddish brown, basal joints lighter, clothed with grey tomentum and long black hairs. Forehead moderately wide, narrowed to vertex, clothed with brown tomentum and black pubescence, longer on vertex. Eyes with dense brown hairs.

Thorax, with four dark tomentose stripes separated by light grey ones, the two inner dark stripes brown, the outer ones black, clothed with semi-erect black pubescence, with straggly tufts of long white hairs above wing roots; shoulders grey with long black hairs; pleurae clothed with grey and brown tomentum, with long mostly white hair tufts. Scutellum, reddish brown in centre, black at sides, clothed with black pubescence.

Abdomen yellowish brown with dark median spots on first three segments, broader on other segments, clothed with dark decumbent pubescence, sides with creamy pubescence. Venter

light yellowish brown with semi-erect dark hairs and decumbent white pubescence.

Legs dark brown, anterior and intermediate tibiae and tarsi lighter yellowish brown.

Wings dark grey in cells, clear for a narrow zone along veins; stigma dark brown, conspicuous; short or rudimentary appendix present.

Hab.:—New South Wales, Narrabri (J. B. Cleland, 10/18).

Four specimens were taken around a well in Pilliga Scrub, 20 miles south-west of Narrabri, biting the horses.

In the coloration of the wings the species strongly resemble *E. macroporum*, Macq., but may be distinguished by the abdomen not uniformly dark reddish. It also differs from specimens from South Australia, which appear to be *E. macroporum*, Macq., in having the second joint of the palpi noticeably shorter, not longer, than the first.

Type presented to Australian Museum, Sydney.

EREPHOPSIS SUBCONTIGUA, n. sp.

Closely allied to *E. contigua*, Walk., but differing in palpi, antennae, abdomen and legs.

♀ Long:—14 mm.

Face clothed with brown tomentum, more yellowish brown on sides, with black pubescence and a few straggling creamy hairs, especially at sides; beard creamy. Palpi dark reddish brown and clothed with black hairs along edges, second joint long, only moderately dilatate at base and ending in a long point, basal portion strongly grooved. Antennae reddish, basal joint blackish, with long black hairs above and creamy below, second joint lighter than third, with long black hairs longest above.

Forehead distinctly wider anteriorly than at vertex, clothed with brown tomentum, yellowish brown at sides, pubescence black, some long black hairs on vertex. Eyes hairy.

Thorax black clothed with dark brown tomentum, more greyish anteriorly, with feeble traces of grey submedian longitudinal lines, pubescence black, with some long mingled black and yellow hairs on lateral borders above wing roots and posteriorly, also a prominent tuft of creamy hairs just behind wing roots. Shoulders brown with black hairs. Sides with a prominent tuft of creamy hairs above and black hairs below. Scutellum black with scanty black hairs.

Abdomen shiny red with a median row of black spots, sometimes absent on third, and generally widening out on apical segments; lateral margins with long black hair, partly creamy on first and second segments, and forming a tuft of creamy hairs on each side of apex. Venter reddish, with scanty creamy depressed hairs. Legs, reddish brown, posterior tibiae darker than others, femora black. Wings dark grey, yellow along costal cell; basal cells, discal cell and basal part of first posterior cell clear, hyaline; a dark brown band across transverse veins at base of discal cell, and traces of a second at apex of discal cell, fading into grey of apex, no appendix; first posterior cell closed or feebly open.

Hab.:—New South Wales, Meldrum (near Armidale) (J. Raven, 28/12/17).

Compared with this species, *E. contigua* differs in the broader lighter palpi, in the lighter coloured basal antennal joints, in the general clothing much more yellowish, in the darker abdomen, in the lighter legs and in the much more heavily marked wings.

The coloration of the second antennal joint is variable; it is perhaps more usually black than yellowish.

Type presented to Australian Museum, Sydney.

EREPHOPSIS RUFONIGER, n. sp.

Allied to *E. lasiophthalma*, but with median abdominal spots united to form a continuous vitta on first three segments and expanding basally on other segments.

♀ Long:—12 mm.

Face and cheeks black with rather sparse grey tomentum and long grey pubescent hairs intermingled with black ones; beard dense creamy; palpi with second joint rather short, moderately dilated, pointed, strongly concave on outer surface, reddish yellow with intermingled grey and black hairs along upper and lower margins; antennae reddish, the third joint somewhat darker than first and second, which bear long black hairs. Forehead distinctly convergent towards vertex, black with brownish tomentum and long black hairs. Eyes densely hairy. Thorax dull black, subnitid where denuded, covered with dark brown tomentum, with long semi-erect black hairs, and with fine decumbent creamy hairs along anterior portion and forming feeble hair tufts above wing roots; shoulders with black hair tufts; sides with very dense creamy hair tufts; scutellum black with sparse creamy hairs on apical margin.

Abdomen reddish yellow, with a broad black median spot on first segment, continuing as a median vitta on the second and third segments, the remaining segments with broad transverse bands occupying the basal two-thirds; traces of creamy pubescence on segmentations; with rather dense lateral tufts, creamy on first and second and apical two segments and black above creamy beneath on the third, fourth and fifth. Venter lighter reddish yellow with sparse yellowish pubescence.

Legs light reddish yellow; tarsi infusate, black at apices.

Wings clear, tips faintly tinged grey, costal margin, the extreme base of wing, and cross vein at base of discal cell suffused with brown; stigma inconspicuous; no appendix present; first posterior cell usually closed, open in type specimen.

Hab.:—New South Wales, Armidale (J. Ravin), Deervale.

Close to *E. lasiophthalma* the present species may be distinguished by the continuous abdominal vitta; from *E. subcontigua*, it differs in smaller size, lighter coloured wings, lighter legs, shorter palpi, etc.

EREPHOPSIS XANTHOPILIS, n. sp.

A distinctively marked black and red species with golden hair tufts and yellow anterior margin to wings; evidently allied to *E. jacksonii*, Macq.

Long:—13 mm.

Face rather strongly convex separated from cheeks by deep grooves, testaceous, with grey tomentum, and a few sparse black hairs, cheeks black with yellowish grey tomentum and golden pubescence; beard golden. Palpi reddish yellow, with second joint broad and produced into a rather long point, moderately deeply concave on outer surface, set with rather short somewhat sparse black hairs. Proboscis long, black. Antennae bright reddish yellow, the basal joints rather lighter in colour, the first with black hairs above, creamy below, the second with a circlet of long black hairs. Forehead distinctly narrowed to vertex, black clothed with yellowish brown tomentum and erect rather short black pubescence. Eyes clothed with light coloured hair.

Thorax black, clothed with blackish tomentum, and set with erect black hairs and scattered decumbent golden pubescence; with rather sparse golden hair tufts above wing roots; shoulders with black hairs and decumbent golden pubescence; sides and breast with prominent golden hair tufts; scutellum black with golden pubescent hairs at apex.

Abdomen bicolorous; first segment reddish narrowly margined with black along the edge of the scutellum, second reddish with a conspicuous median vitta from base to apex, remaining segments black; pubescence black with a series of creamy median triangular spots on the posterior margins of the second to sixth segments; lateral margins with creamy hair tufts on the second and apical segments and black overlying creamy tufts on intervening segments. Venter reddish yellow with rather scanty fine decumbent black and light hairs. Legs reddish yellow with basal half of femora black, posterior tibiae darker and tarsi infuscate.

Wings light grey, the anterior margin and base tinged yellow, the base of discal cell and cross veins above lightly suffused with brown; stigma inconspicuous, veins yellowish or light brown; no appendix; first posterior cell closed.

Hab.:—New South Wales, Hawkesbury River (29/11/13), Dorrigo (Feb., 1918), Comboyne (3/12/17); Victoria, Bright (H. W. Davey).

I have had this species for some time queried as *E. jacksoni*; on a recent visit to the British Museum it appeared to me to be different from the species so identified in that collection; subsequently a specimen was sent home for comparison with the specimens of *E. jacksoni*, and has been returned as "*Erephopsis* sp., not in British Museum." Under the circumstances I have decided to give the species a new name as specimens are in various Australian Museums, and require an appellation, and because I feel confident that I know the true *E. jacksoni*, Macq.

The amount of shading on the cross veins varies; it is always rather faint and generally more yellow than brown, and in some specimens is almost evanescent. The Victorian specimens lack the white spots on the abdomen, but this may be due to abrasion.

Type presented to Australian Museum, Sydney.

Parasilvius, n. g.

Ocelli and spurs on hind tibiae present. Face protuberant; palpi very short, first joint round, with undersurface convex, second joint short subcylindrical; antennae with first joint short about twice as long as second, third joint broad at base then subulate, with five distinct subdivisions and evidences, most marked in ♀, of three further subdivisions.

Forehead broad and concave in ♂; eyes feebly pubescent in ♀; evidently so in ♂; wings with posterior cells all widely open, anal cell closed.

This genus is proposed for a species from Victoria which cannot be referred to any of the previously described ones. The ♀ has a broad, irregularly grooved forehead very reminiscent of *Ectenopsis*, but the palpi are very different, and the whole insect has a broader facies. The antennae might be regarded as having the third joint, five or eight segmented; in the type ♀, under the microscope (and to a less extent with a hand lens) the apex of the basal portion of the third joint appears very indistinctly divided into three annuli; in the other ♀, this subdivision is still more distinct, while in the ♂ this portion of the joint appears unsegmented. It seems to me that the genus is one in which the antennae are in process of being converted from an eight annulate third joint to a five annulate, by a process of fusion of the four basal annuli.

Regarding the third joint as five annulate the genus may be distinguished from *Silvius* by the shape of the palpi. If the third joint be regarded as eight annulate the genus would fall in the same group as *Ectenopsis* and *Demoplatus*; from all the members of which, excepting possibly *Palimmecomylia*; the genus may be separated by its hairy eyes and short palpi. I do not think this genus can be the same as *Palimmecomylia*, as judging from the description the antennae are different, and apparently have a distinctly eight annulate third joint.

PARASILVIUS FULVUS, n.sp.

♀ Long:—11 mm., a second ♀ 15 mm.

Face protuberant, bounded on each side by deep grooves, bright yellow with fine scanty pubescence; beard yellow; palpi very short, yellow, first joint briefly oval almost rounded in outline, the lower surface convex, clothed with long yellow hairs, second joint short, slender, subcylindrical, ending in a blunt point, with short black hairs most thickly set at apex; proboscis of moderate length, slightly longer than head; antennae reddish yellow, the first two joints paler, annuli black at tip, first two joints with a few black hairs at apices, third joint transverse subquadrate at base, thence subulate, with very indistinct traces of three annulations followed by four distinct annuli. Forehead irregularly grooved on each side of middle, distinctly wider anteriorly than at vertex, yellow, clothed with yellow tomentum and extremely scanty pubescence; ocelli conspicuous with some black hairs, on ocellary triangle; eyes with very short hairs, facets equal. Thorax deep brown, shoulders yellow; clothed with

yellow tomentum and with erect yellow pubescence mingled with darker hairs, especially in middle, with tufts of golden hairs above and behind wing roots; shoulders and pleurae with golden hairs; scutellum similar to dorsum, fringed with golden hairs.

Abdomen flat, broad, dark tawny, first segment black in middle and lighter reddish yellow at sides; clothed with short decumbent black pubescence, with longer black hairs along each side and at apex, base and sides of first segment with yellow hairs; venter reddish yellow, with fine yellow pubescence.

Legs reddish yellow, posterior tibiae darker, femoral pubescence yellow, elsewhere dark.

Wings tinged grey, costal cell and extreme base yellow, stigma brownish yellow, inconspicuous, an appendix present.

♂ Long:—10 mm.

Face densely covered with yellow tomentum and long yellow pubescence; palpi short, first joint rounded, convex on lower surface clothed with long yellow hair, second short subcylindrical, rather stout, with black and yellow hairs. Antennae similar to ♀ but apex of basal portion of third joint apparently non-segmented. Eyes contiguous, hairy. Thorax clothed with long brown hairs and with dense tufts of golden yellow hairs at sides, posterior border and posterior margin of scutellum with long yellow hair.

Abdomen shorter than in ♀, first segment black, with basal black spot on second segment, the whole densely clothed with long black hairs, sides of segments with long yellow hairs; venter with long yellow and black hairs intermingled. Legs and wings as in ♀.

Hab.:—Victoria, Sea Lake (J. C. Goudie, Nov.-Dec., 1916). Described from 2 ♀♀ and 1 ♂. The second ♀ is larger than the type, and the yellow hairs on thorax do not extend to middle, which is clothed with the darker hairs; the abdomen is lighter tawny colour, but it is possible that this specimen is in better preservation; the other was selected as type, as it corresponds more closely with the male in size and general appearance.

Types in National Museum, Melbourne.

ECTENOPSIS VULPECULA, Weid.

Weid. Ausszweifel. Ins., 1, p. 195 (Chrysops) (1828); Ricardo, Ann. Mag. Nat. Hist. (8), XVI., p. 266 (1915); Taylor, Records Australian Museum, XII., 5, p. 63 (1918).

Miss Ricardo has recorded the synonymy of *Pangonia angusta*, Macq., *Corizneura angusta*, Bigot and *C. rubiginosa*, Bigot, with

E. vulpecula, Weid., the type species of the genus. While the above three species are undoubtedly the same it seems to me questionable whether they are really synonymous with *E. vulpecula*, Weid.

I have not seen Weidemann's original description, but apparently the name was applied to a species with black legs. I have taken a species at Sydney which has the legs, except the coxae deep black, the wings are also smoky, almost deep black in fresh specimens, but fading somewhat with age, the palpi variable in colour, black to testaceous. Compared with this, which corresponds closely with *E. vulpecula*, Weid., var. *nigripennis*, Taylor, are specimens in which the legs are yellowish (testaceous) and the wings clear, the stigma being inconspicuous in marked contrast to the black of the stigma in the other form. While I recognise that the species may prove sufficiently variable to include the two forms, I think that at any rate varietal names should be given to each. *E. vulpecula*, Weid., evidently from all the evidence, should be applied to the black legged form, and I would regard the var. *nigripennis*, Taylor, as a synonym. I have found this form during two seasons on the flowers of *Bursaria spinosa*.

E. angusta, Macq. (= *E. angusta*, Bigot and *E. rubiginosa*, Big.). would apply to the paler legged form. I am indebted to Dr. Guy A. K. Marshall for the following particulars of these species:—

"*Ectenopsis angusta*, Macq. (3 ♂♂), and *E. rubiginosa*, Big. (1 ♂) seem certainly the same, all femora dull testaceous (like the abdomen); anterior pairs of tibiae similar but slightly infuscated at apex, hind pair infuscated throughout; tarsi blackish, anterior pair paler at base.

"*E. angusta*, Big. (1 ♀). Femora testaceous yellow; tibiae very slightly darker; tarsi infuscated, paler at base."

ECTENOPSIS (?) MINOR, Taylor.

Silvius minor, Taylor, Records Australian Museum, XII., 5, p. 62 (1918).

I have examined the type of this species, and am strongly of the opinion that it cannot be retained in *Silvius*. Mr. Taylor kindly re-examined the type at my request, and agrees with me that the antennae are much more of the *Ectenopsis* type. The number of annulations of the third joint are extremely difficult to make out, but six subdivisions can be seen while the apical

portion representing the last three joints in *Ectenopsis* appears unsegmented. Probably a new genus may have to be erected for the species, but the general facies is so like *Ectenopsis* that I do not think it advisable to do so in the present state of our information on this genus.

ECTENOPSIS AUSTRALIS, Ric.

Ricardo, Ann. Mag. Nat. Hist. (8), XIX., p. 217 (1917); Taylor, Records Australian Museum, XII., 5, p. 63, (1918).

Miss Ricardo is incorrect in her statement as to the location of the types—the male type is in the British Museum, not the female, as stated by Miss Ricardo; the latter is at present in my possession, but it is intended to present it, with other types, to the Australian Museum, Sydney.

Mr. Taylor's descriptive notes do not apply to this species. I have examined the specimens in the Australian Museum, and they are certainly not *E. australis*, Ric. The female type measures 10.5 mm. in length.

ECTENOPSIS (?) VICTORIENSIS, sp. n.

A dark brown species with long body and comparatively short wings, doubtfully assigned to this genus.

Long:—14 mm., width across head 3.5 mm., wing 11 mm.

Face protuberant with very deep sulci on each side, yellow-brown clothed with grey tomentum and scanty grey pubescence; beard scanty grey; palpi yellow, first joint very short subcylindrical, clothed beneath with long grey hairs; second joint slender, at least twice as long as first; curved, slightly constricted at base, and ending in a fine point, clothed with short dark hairs; antennae with first two joints yellowish-brown, tipped with black hairs, the third joint with small quadrate basal portion and first three annuli which are small and indistinct, reddish yellow, and the remaining annuli black and much more distinct. Forehead light brown covered with grey tomentum, and some black hairs on ocelligerous triangle; concave anteriorly, and about twice as wide as it is at vertex. Eyes bare, facets equal. Thorax deep brown, clothed with brown tomentum and with traces of yellow brown tomentum forming an indistinct stripe on each side of median area; with semi-erect dark hairs anteriorly and long scanty decumbent grey pubescence posteriorly, and above wing roots, sides with scanty grey pubescence, scutellum similar with a fringe of scanty grey hairs.

Abdomen dark brown, segmentations yellowish brown; first segment with grey pubescence, remainder with short decumbent dark pubescence, and a fringe of yellowish brown hairs on segmentations; venter similar, segmentations rather broader. Legs light yellowish brown, the posterior pair rather darker, tibiae slightly darker at apices; tarsi brown; long spurs present on posterior tibiae.

Wings, grey, yellowish brown along the anterior border; veins brown, stigma brown, appendix present, all the posterior cells open.

Hab.:—Victoria, Mallee District.

Described from a single female sent by the National Museum, Victoria. I have referred this species to *Ectenopsis* with a good deal of hesitation, the antennae are very similar to those of *Parasilvius*, and the basal divisions of the third joint are very indistinct. The palpi are, however, different, and more like those of *Ectenopsis*, though shorter and more slender. Probably a new genus will ultimately have to be erected for its reception, but I am unwilling to do so at present on a single female. The coloration will readily prevent any confusion with the described species of *Ectenopsis*.

Type in National Museum, Victoria.

Since the above description and notes were written, I have received for examination two males belonging to the South Australian Museum, which appear to me to belong to the same species as the Victorian female. There are some differences which may, however, be sexual, and the specimens are certainly too like *E. victoriensis* to be described as distinct, at least until a South Australian female can be obtained.

Following is a short description of the males in so far as they differ from the type female.

♂ Long:—10-12 mm.

Colour and clothing as in female; eyes contiguous, bare, facets equal; ocelli distinct. Facial triangle reddish brown, clothed with grey tomentum and with long bristle-like hairs, first joint short and stouter than second; second short and ending in short point, shorter and stouter than in female; antennae rather more slender than in ♀, and with apical annulus only dark, the third joint with five distinct annuli and indistinct evidence of two further subdivisions, the apex of antennae with a group of short hairs.

Thorax dark brown with evidences of three indistinct greyish tomentose stripes, clothed with upright brown hairs, sides with

tufts of long pubescence, mostly creamy, brown in centre; scutellum reddish brown.

Abdomen, narrower than in female, dark brown, segmentations lighter, clothing abraded.

Legs and wings as in female.

Hab.:—South Australia, Denial Bay, Murray River.

SILVIUS SULCIFRONS, n. sp.

A black medium sized species; forehead with median line depressed, sulciform; wings clouded on veins.

♀ Long:—12 mm., width of head 4 mm., wing 11 mm.

Face and cheeks clothed with grey tomentum and rather sparse black pubescence, a few white hairs in groove between face and cheeks; beard white; palpi dark reddish, clothed with short black pubescence, second joint long, nearly equal to proboscis, slightly curved; moderately stout at base, apex truncated; antennae with first joint rather long, black, clothed with grey tomentum and black pubescence, second joint much shorter, reddish, with circlets of black hairs, third joint reddish, annuli black, base broad with a very strong tooth projecting forwards; subcallus not strongly tumid nor shiny, densely clothed with grey tomentum and with short black pubescence. Forehead comparatively narrow, subparallel, densely clothed with brownish tomentum, with scattered black pubescence; a short linear callus anteriorly followed by a depressed sulciform line extending to ocellary triangle; ocelli present; eyes hairy.

Thorax black, tomentum dusky, with faint traces of a submedian grey line on each side anteriorly; pubescence black, a few grey hairs posteriorly and at sides; shoulders dark, with reddish tinge, clothed with long black pubescence, sides black with grey tomentum and tufts of long hair mixed with black and hoary grey. Scutellum black with scanty grey hairs along posterior margin.

Abdomen black, segmentations reddish brown; with decumbent black pubescence and apical triangular white flecks on second, third and fourth segments, first four segments also with posterior margin fringed near sides with white pubescence.

Legs dark, femora black with yellow knees, tibiae and tarsi reddish brown; posterior tibial spurs rather long and distinct. Wings with veins faintly margined with brown; most distinct along anterior border and on cross veins.

Hab.:—West Australia, Perth (G. H. Hardy).

Four specimens under examination. The species is somewhat variable in the coloration of the abdomen, in one specimen the segmentations are broader and more reddish, while in another the third and fourth segments are almost wholly reddish, while the black on the second is reduced to a large median spot; the wings in these two are also more heavily shaded with brown, and the palpi more dusky. As in other respects these agree with the type, I cannot separate them specifically.

The species should be readily recognised by the frontal structure; the hairy eyes will also distinguish from most described Australian species of *Silvius*.

The type has been kindly presented to the Australian Museum, Sydney, by Mr. G. H. Hardy.

SILVIUS NIGROAPICALIS, n. sp.

A dark winged species allied to *S. nigripennis*, Ric., but with basal two-thirds of abdomen bright yellow.

♂ Long:—12 mm., width across head 4 mm., wing 10.5 mm.

Face clothed with bright golden yellow tomentum and similar coloured pubescence; beard golden yellow; palpi black clothed with short black hairs, first joint short and narrow, second joint rather stout, broader than first and about three times as long; antennae black, first two joints with black hairs, third joint broad and angulate above at base, annuli indistinctly divided. Subcallus not protuberant, densely clothed with golden yellow tomentum. Eyes contiguous, bare, facets equal; ocelli present.

Thorax black, clothed with dense black pubescence; shoulders and pleurae clothed with dense tufts of long golden yellow hairs; scutellum black with black pubescence.

Abdomen with first three segments golden yellow, with rather scanty golden pubescence along the posterior margins, remaining segments black with black pubescence; venter with same alternation of colour, golden pubescence on basal segments rather more dense. Legs black. Wings tinged dark sooty grey, almost black, slightly paler in centre of cells and at extreme tip; no appendix present.

Hab.:—North Queensland, Claudie R. (J. A. Kershaw, 16/1/14).

The species, of which I have two males before me, is allied to *S. nigripennis*, Ric., from the same locality. The differences in the clothing of head and thorax and in the coloration of the abdomen are too great for me to consider that it is the male of

S. nigripennis, though the coloration of the wings is exactly as in that species.

Type in National Museum, Melbourne.

SUB-FAMILY TABANINAE.

Tabanus.

Group XI.—*Theriopectes*. Eyes Hairy.

TABANUS CIRCUMDATUS, Walker.

List, Dipt. I., p. 185 (1848); Ricardo, Ann. Mag. Nat. Hist. (8), XVI., p. 280 (1915).

Synonyms: *T. nepos*, Walk., *T. abstersus*, Walk., *T. brevidentatus*, Macq., *T. hebes*, Walk.

Considerable confusion still exists between the three allied species, *T. circumdatus*, Walk., *T. antecedens*, Walk., and *T. edentulus*, Macq. As the result of the study of a considerable amount of material from Tasmania and the southern portion of Australia, I had hoped to be in a position to state definitely what were to be regarded as the differential features separating them. For various reasons, it appears desirable to postpone a detailed discussion of this question, and I have limited my remarks to a purely preliminary note on each species.

The chief difficulty confronting any worker on this difficult group (*Theriopectes*) is the variability of some of the species. In this respect, *T. circumdatus* is extremely difficult to define; at present I regard it as distinct from *T. edentulus*, but many forms occur which might with almost equal justice be referred to either species, or in some instances justify their erection into distinct species.

In Tasmania occur three closely allied forms, one certainly *T. circumdatus*, another identified by White as *T. edentulus*, and apparently always distinguishable from *T. circumdatus* by the noticeably different antennae, and the third a larger species provisionally identified as *T. acutipalpis*, Macq. *T. antecedens* is readily distinguished from all three and appears to be restricted, as far as my observations go, to Tasmania.

On the mainland occur variable forms of both *T. circumdatus* and *T. edentulus*, some of which tend to link up the two species.

Miss Ricardo, besides giving the above synonymy, notes the possible synonymy of *T. edentulus*, *T. acutipalpis*, and *T. fraterculus*, Macq., with *T. circumdatus*. I have no knowledge of *T. fraterculus*, Macq.

TABANUS EDENTULUS, Macq. (Plate II., fig. 5).

Macquart, Dipt. Exot. Supp. i., 34, 68, Tab. iii., fig. 13 (1845); White, Papers and Proc. Roy. Soc. Tasmania, p. 10 (1915).

Mr. White has attached Macquart's name to a species closely allied to *T. circumdatus*, but I do not know what is his authority for the identification. While in Paris I examined a number of Macquart's Australian Tabanidae, and have the following brief note on this species:—

“‘*T. edentulus*, Macq., n. sp.’ So marked in Macquart's handwriting, has the eyes densely covered with white silky pubescence, otherwise it is a dark species. I think it is *antecedens* according to White.”

I do not now remember my authority for ascribing the handwriting to Macquart; probably my informant was M. Lesne, who was so kind as to show me the specimens. I cannot be certain that the specimen examined was actually the type, as there was no type label. Pending further enquiries I do not propose to sink *T. antecedens*, Walker, under *T. edentulus*, Macq.

The species identified by White as *T. edentulus* is certainly distinct from *T. antecedens*, Walker, but for the present I have left the species under Macquart's name. White's paper may be referred to for a full description.

Typical specimens differ from *T. circumdatus* in the noticeably more slender third joint of the antennae; as a rule, it is a smaller, darker species than *T. circumdatus*, but is variable both in size and colour.

Further discussion of the variations, both of this species and *T. circumdatus* is postponed for the present.

TABANUS ACUTIPALPIS, Macquart.

Macquart, Dipt. Exot., 1, p. 131 (1838).

Specimens of a large species allied to *T. circumdatus* are before me; they agree with specimens in the British Museum doubtfully labelled *T. acutipalpis*, Macq.

While in Paris I made the following note on specimens labelled *T. acutipalpis*:—

“*T. acutipalpis*, Macq., Tasmania, seems to me certainly *T. circumdatus*. Nine specimens, with at least two with labels in Macquart's handwriting.”

Miss Ricardo's notes under *T. circumdatus*: “*Tabanus acutipalpis*, Macq., appears very similar, but is larger in size.”

As most of the Tasmanian specimens of *T. circumdatus* are larger than the mainland ones, I think it is likely that this synonymy will be found correct; at present, however, I am not quite certain, as I am not sure I saw the type, and as I did not have undoubted specimens of *T. circumdatus* with me for comparison. For the present, therefore, I do not intend to describe the specimens alluded to above which are certainly distinct from *T. circumdatus*. They represent a species which seems confined to Tasmania, Flinders Island (probably other islands of Bass Strait), and the neighbouring portion of Victoria.

Macquart gives the locality as follows:—De l'île King, dans l'Océanie. M. Durville. Museum. Is it possible that King Island in Bass Strait was intended?

TABANUS ANTECEDENS, Walker (Plate II., fig. 3.)

Walker ♂ List. Dipt. i., p. 178 (1848); ♀ List. Dipt. V., p. 253 (1854); Ricardo, Ann. Mag. Nat. Hist. (8), XVI., p. 2/9 (1915); White, Roy. Soc. of Tasmania, Papers and Proc., p. 9 (1915).

There can be no doubt from the description given by Miss Ricardo of Walker's type, female, that White is correct in identifying it with a common Tasmanian species allied to, but distinct from, both *T. circumdatus*, Walk., and the species generally known as *T. edentulus*, Macq.

By a curious error, however, Miss Ricardo has reversed the references given for the sexes, the male having been described first in 1848.

Referring to the male, Miss Ricardo gives the following note:—"The male type of *Tabanus antecedens* comes from New Holland (Hunter), and the antennae are imperfect; whether it is really the male of the above is doubtful." This opens up the question as to the correct assignation of the name to the female, which is further complicated by the possibility that the name *T. edentulus*, Macq., should belong of rights to the species under review and not to the one usually identified under this name.

Pending further information I am content to leave the names as at present utilised. Thus understood *T. antecedens* may be distinguished from *T. edentulus*, Macq. and *T. circumdatus*, Walk., by the pubescence on the eyes noticeably longer and denser and white in colour, and by the more densely hairy front.

In these respects it is nearer *T. latifrons*, sp. n., but the wider forehead will distinguish that species.

TABANUS LATIFRONS, n. sp. (Plate II, Fig. 1).

Allied to *T. antecessens*, Walk., but with broader forehead.

♂ Long:—12 mm.; width of head 5 mm.; wing 10.5 mm.;

♀ Long:—13 mm.; width of head 5 mm.

♀ Black; face, cheeks and subcallus black, reddish brown above proboscis, densely clothed with white tomentum, and with long pubescence, white below, dark above and on subcallus, the latter not markedly tumid nor shining. Palpi dusky, lighter at apex, moderately thickened at base, with dark grey tomentum and mixed pale and dark pubescence, long and somewhat straggling at base, shorter at apex. Antennae black, first and second joints grey, and clothed with long dark hair like pubescence, third joint broad at base, prominently angulate above, annuli somewhat shorter than basal portion. Forehead very broad anteriorly, distinctly narrowed to vertex, about twice as long as it is wide anteriorly; densely clothed with dark brown tomentum, slightly variegated with grey, and with long dense dark hairs, longest and most dense at the vertex; callus transverse or subquadrate, reaching eyes without lineal extension, black. Eyes densely pubescent, the pubescence long, light brown with grey reflections from certain directions. Thorax black, shoulders reddish, densely clothed with black tomentum with a narrow indistinct grey tomentose stripe on each side of median area most evident anteriorly, and two indistinct lateral stripes most distinct posteriorly; dorsum densely clothed with long erect black pubescence, and with scattered white decumbent pubescence, most distinct posteriorly. Sides black with long pubescence, mostly white, but dark in centre. Scutellum black, fringed on each side with long white pubescence.

Abdomen subparallel, black, segmentations dark grey, hardly lighter than rest of dorsum, densely clothed with semi-erect black pubescence, with small white pubescent spots on all segments except first, most distinct on 2-5; the lateral and postero-lateral margins of segments from the second also fringed with white pubescent hairs. Venter black with dark grey tomentum, and densely clothed with long erect black hairs, posterior margins of segments with short depressed white pubescence.

Legs dark, femora black, tibiae dark reddish brown, the intermediate lighter in colour, and the anterior black at apex; tarsi black; femoral pubescence mostly dark, pubescence on posterior tibiae irregular as in *T. antecessens*.

Wings, hyaline, veins and stigma black; appendix present, always short, sometimes rudimentary.

♂ Eyes contiguous, very densely hairy, facets apparently uniform in size. Antennae with third joint less expanded at base, first and second joints very hirsute.

Palpi yellowish brown, second joint oatshaped, densely pubescent.

Thorax similar to ♀. Abdomen much more strongly narrowed to apex, black sides of first and second segments reddish brown, clothing as in ♀.

Legs and wings as in ♀.

The female differs from *T. antecedens* female in the wider front, which is also more hirsute, the basal antennial joints are also much more hirsute. In general it is darker in colouration than *T. antecedens*, of which it may represent a mountain race.

Hab.:—Cradle Mountain, Tasmania (G. H. Hardy, Jan., 1917), 1♂, 7 ♀♀. Two females from Mount Wellington and one female from Maria Island apparently belong also to this species, but differ in having the second abdominal segment reddish brown towards sides, with lighter anterior margin (in *T. latifrons* the anterior margin of second segment is dark greyish), the other segmentations also are obscure reddish grey, instead of dark grey.

In some specimens the first and second joints of antennae are black. A further long series of this species from Cradle Mountain, collected by Messrs. A. M. Lea and H. J. Carter, is in the South Australian Museum collection. Types presented to Australian Museum, Sydney, by Mr. G. H. Hardy.

TABANUS TASMANICUS, n. sp. (Plate II., Fig. 2).

A medium sized dark species, resembling *T. edentulus* in appearance, but with frontal callus not reaching eyes.

♀ Long, 13 mm., width across head 4.5 mm., wings 11 mm. Face and cheeks densely covered with grey, almost white tomentum, and with scattered black pubescence, a few white hairs at sides of face; beard white, with a few intermingled dark hairs. Palpi slender, somewhat thickened at base, cream coloured, clothed with scattered mingled dark and pale hairs, longer at base. Antennae reddish brown, the third joint darker, first and second joints with moderately short black hairs; third joint not greatly expanded at base, angle small but distinct, annuli longer than basal portion. Subcallus black, densely clothed with grey

tomentum. Forehead wider anteriorly, about three times as long as broad anteriorly; clothed with grey tomentum, blackish in middle, and with moderately sparse dark hairs; callus black shining, small transverse, not reaching eyes, with short linear extension. Eyes with moderately dense short brown pubescence, width across eyes less than the width of abdomen.

Thorax black covered with grey tomentum, leaving three indistinct black lines, one median and two lateral, a short black line also traceable on each side above wing roots; pubescence white, scattered; long dark erect hairs also present, most numerous anteriorly; shoulders grey; sides grey with long white hairs. Scutellum black with grey border, and with a fringe of long rather scanty white hairs.

Abdomen dark brown, first segment almost black, base of second segment and the segmentations rather broadly margined with grey; pubescence dark on basal portions, creamy white along segmentations, the white hairs thickest at sides, and on a series of apical median spots forming a more or less continuous median stripe. Venter yellowish, darker at base of segments, with long black semi-erect hairs and with finer decumbent creamy hairs most marked on segmentations.

Legs yellow, femora dark brown, almost black, with yellow knees; tarsi infuscate, especially the anterior; pubescence on posterior tibiae rather straggling and irregular.

Wings hyaline, the veins very faintly margined with light brown, slightly more distinct on cross veins; stigma and veins brown, long appendix present.

Hab.:—Tasmania, Dunally (seven specimens); Bream Creek (two specimens). Collected by G. H. Hardy.

Dates of collection, Dunally, 9-15/2/18; Bream Creek, 18-20/2/18.

The coloration of the thorax varies somewhat, and might be better described in the Bream Creek specimens as black, with more or less distinct grey lines; most of the specimens have, however, the thorax as described, though greyish lines are traceable between the black stripes.

The head is small as compared for example with specimens of *T. edentulus* of the same size. The size is also variable, ranging from 9.5 to 13 mm.

I do not know of any previously described species with which this can be confused.

Type presented to Australian Museum, Sydney, by Mr. G. H. Hardy.

TABANUS BASSII, sp. n. (Plate II., Fig. 4).

A small dark species with elongate frontal callus, not reaching the eyes.

♀ Long, 10 mm., width across head 4 mm., wing 9 mm.

Face black, densely covered with yellowish grey tomentum, and with long dark pubescence intermixed with a few sparse yellowish hairs; beard creamy. Palpi slender, little thickened at base, pale yellowish brown, clothed with cream pubescence below and with dark hairs above. Antennae black, first joint with a few sparse black hairs, third joint rather strongly widened at base, angulate above, annuli as long as rest of joint. Subcallus black, shining where denuded, clothed with dense yellowish grey tomentum. Forehead moderately narrow, very slightly narrowed at vertex, clothed with dense dark grey tomentum, with a distinct yellowish tinge, and with short black pubescence longer on vertex; callus elongate, narrow, about one-third width of forehead, tapering above, and with a lineal extension to middle. Eyes clothed with dense brownish pubescence.

Thorax black, shoulders grey, with rather sparse pale creamy decumbent pubescence, and longer erect black hairs; sides posteriorly, with tufts of creamy pubescence; shoulders with long black hairs; pleurae dark grey, with intermixed creamy brown pubescence. Scutellum black, grey at sides, fringed with long pale creamy pubescence.

Abdomen black, first segment brownish yellow at sides, second segment brownish yellow at sides and along each margin, segmentations margined with same colour; clothed with decumbent black pubescence, the segmentations with creamy, almost pale golden pubescence, dilated to form a series of median triangular spots on the segments. Venter black, with lighter segmentations, covered with yellowish grey tomentum, and with creamy pubescence most dense on the segmentations.

Legs with femora black, tibiae reddish brown, the anterior darker at apex, and tarsi dark reddish brown, the anterior black femoral pubescence long, creamy, posterior tibial fringe rather short, regular, black, a few pale hairs intermingled.

Wings hyaline, veins brown, very faintly margined with light brown, stigma brown, conspicuous; appendix present.

Hab.:—Victoria, Wilson's Prom. (Prof. Sir Baldwin Spencer); Macedon (J. E. Dixon, 17/2/17); Gippsland, Forrest (H. W. Davey); Tasmania, Wynyard (G. H. Hardy).

This species may be distinguished from its nearest congeners, *T. tasmanicus* and *T. dixonii*, by the frontal callus; the forehead is also very much narrower than in *T. dixonii*. The shading of the wing veins varies considerably, and in some specimens the wings appear quite hyaline.

Type in National Museum, Melbourne.

TABANUS DIXONII, n. sp. (Plate II., Fig. 6).

A small species allied to *T. postponens*, but with much broader forehead.

♀ Long, 10.5 mm., width across head 4.5 mm., wing 9.5 mm.

Face and cheeks light reddish yellow, covered with grey tomentum and with scanty whitish pubescence; beard white. Palpi slender, a little stouter at base, yellow with long white pubescence at base, and a few short dark hairs elsewhere. Antennae with first two joints yellow, broadly dilated and angulate above; annuli black about as long as basal portion. Subcallus yellowish brown or reddish yellow, much denuded, in other specimens covered with grey tomentum. Forehead broad, hardly more than twice as long as wide, parallel sided; reddish yellow, clothed with grey or yellowish grey tomentum, and with scattered short black hairs; callus reddish yellow, small, inconspicuous, about one-third the width of front, tapering to a point, and with a lineal extension to middle. Eyes with rather short, fine pubescence.

Thorax black, shoulders reddish grey, clothed with grey tomentum, leaving indistinct indications of three black stripes separated by grey lines; with sparse decumbent golden pubescence and long erect black hairs, with scanty tufts of grey hairs above wing roots; shoulders with long dark hairs; sides reddish grey with long grey pubescence. Scutellum black with grey tomentum. Abdomen black, segmentations pale grey, dilated in centre to form a row of triangular spots on segments two to six, second segment bordered with grey at base; pubescence decumbent black, pale creamy on segmentations and on the median spots. Venter pale reddish yellow, somewhat darker at apex, clothed with grey tomentum with scanty short dark hairs, intermingled with creamy ones.

Legs pale reddish yellow, anterior tarsi black, the others dark reddish brown; femoral pubescence pale, posterior tibiae with rather sparse brown hairs. Wings clear, costal cell pale brown, veins brown, stigma brown distinct, appendix present.

Hab.:—Victoria, Lake Hattah (near Murray River), (J. E. Dixon, Nov., 1918); Mallee (J. E. Dixon, October, 1918).

The callus in this species is inconspicuous, being little raised and of the same colour as the frontal derm.

Mr. Dixon informs me that the eyes are brilliant green in life.

From *T. postponens*, Walk., it differs in its much darker coloration and wider front. The difference in the forehead, coloration of callus, antennae, legs, etc., will differentiate it from *T. bassii*, sp. n.

The Mallee specimen is larger than the type, measuring 13 mm.

Type in National Museum, Melbourne.

TABANUS REGIS-GEORGII, Macq. (Text figures, 1a, 2).

Macquart, Dipt. Exot., 1, p. 132 (1838); Ricardo, Ann. Mag. Nat. Hist. (8), XVI., p. 276 (1915); *T. brisbanensis*, Taylor, Proc. Linn. Soc. New South Wales, XLII., 3, p. 526 (1917); id, XLIV., 1, p. 67 (1919).

I am indebted to the authorities of the Queensland Museum for a series (3 ♂ and 3 ♀) of *T. brisbanensis*. The females are identical with females from New South Wales, and identified as *T. regis-georgii* at the British Museum.

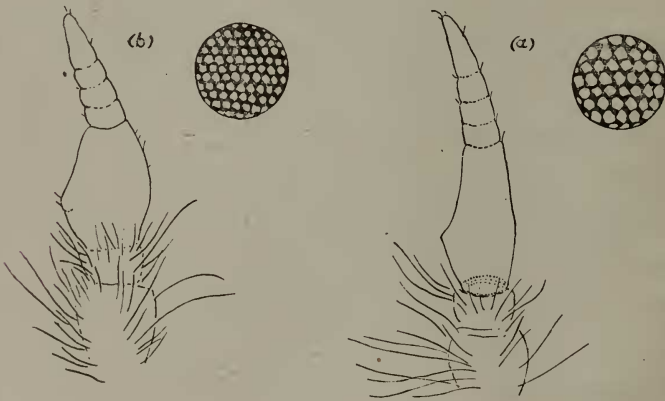


FIG. 1.

Text figure 1a. *Tabanus regis-georgii*, Macq., ♂ antenna and eye facets.

The specimen from which this figure is drawn was sent from the Queensland Museum under the name of *T. brisbanensis*, Taylor.

b. *Tabanus diemanensis*, n. sp., ♂ antenna and eye facets.

Mr. Taylor has recorded *T. brisbanensis* also from Tasmania, at the same time pointing out certain differences between the females, though he does not regard these differences as of specific value. There is a long series of a species very close to *T. regis-georgii* among Mr. Hardy's Tasmanian Tabanidae, which probably are the same as the species Mr. Taylor had from Tasmania. Though the females are very close, the males present differences which appear to be certainly of specific value. Further details will be found under the following species:—

TABANUS DIEMANENSIS, n. sp. (Text Figures 1b, 3.)

Closely allied to *T. regis-georgii*, Macq., but differing in the more finely faceted eyes of the male.

♂ Long:—10 mm., width of head 4 mm., wing 9 mm.

Face and cheeks densely clothed with creamy yellow tomentum, and with long brownish hairs; beard yellow. Palpi nearly as long as proboscis, second joint elliptical, yellow, set with long hairs, creamy at base, brown nearer apex. Proboscis very short. Antennae reddish brown, the first joint more greyish, and the annuli blackish, first two joints with long hairs, yellowish on undersurface of joints, brown above; third joint noticeably shorter (though somewhat variable in length) than in *T. regis-georgii*, with basal portion broader and more distinctly angulate, annuli shorter. Eyes contiguous, densely clothed with long black hairs, with larger facettes occupying the upper and inner two-thirds, becoming finer below, and also towards the upper margin, these larger facettes noticeably smaller than the corresponding ones in *T. regis-georgii*.

Thorax with a broad median band from anterior margin to middle, indistinctly divided by a narrow paler median stripe, and continued from middle as a narrow, dark median stripe, also with narrower sublateral dark stripes and a short narrow stripe over each wing root, these dark stripes separated by narrower grey stripes; rather densely clothed with fine creamy decumbent pubescence, and with longer erect brownish hairs; rather small creamy tufts of hairs present above wing roots; shoulders with dark hair tufts; sides with tufts of long creamy yellow hairs brownish in centre. Scutellum dark brown, the apical margin grey, and fringed with long creamy hairs.

Abdomen dark brown, the segmentations broadly banded with lighter colour, varying from light brown to creamy, and forming

a series of median triangular spots on each segment, second segment with sides and basal border pale; pubescence black on dark portions, bright creamy almost golden on pale areas and segmentations. Venter light yellowish brown with bright semi-erect creamy pubescence.

Legs with femora blackish, tibiae yellowish brown, and tarsi infusate.

Wings hyaline, the costal cell, extreme base and cross veins very lightly suffused with brown, stigma brown, conspicuous; small appendix present.

Long:—10.5 mm., width of head 4 mm., wing 9 mm.

♀ Resembles male; forehead moderately broad, wider anteriorly than at vertex, densely covered with yellowish grey tomentum, brownish in centre; callus pear shaped, varying in shape and width. Palpi with second joint rather long, curved, rather slightly thickened at base.

Hab.:—Tasmania, Bream Creek (G. H. Hardy, 18/2/18); Wedge Bay (G. H. Hardy, 28/2/18); S. Bruni Is. (Dr. Clarke, Jan., 1916).

The series before me shows great variation in the colouring of the abdomen; in many the dark markings on the abdomen are reduced to little more than a basal spot.

From the ♂ of *T. brisbanensis* (= *T. regis-georgii*) the present species differs in the more finely faceted eyes and in the

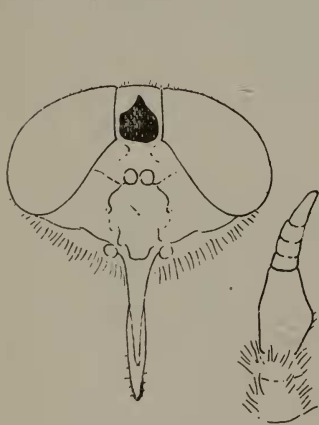


FIG. 2.

Text figure 2. *Tabanus regis-georgii*, Macq., ♀ head and antenna. Specimen from Kendall, New South Wales.

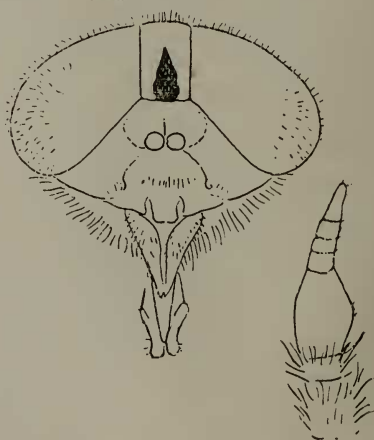


FIG. 3.

Text figure 3. *Tabanus diemanensis*, n. sp., ♀ head and antenna.

differently shaped antennae, though in this last respect the series shows some variation. Females are harder to distinguish, as a rule, however, the callus is longer and narrower than in *T. regis-georgii*. Great variation is shown in this respect; in some the callus is as broad as in many specimens of *T. regis-georgii*; in most, however, it is narrower and more elongate, while in some it is almost linear, and very different from the very broad rounded callus of many specimens of *T. regis-georgii*. In general the Tasmanian species is darker, and more hairy than the mainland one, of which it is the island representative.

Types in Australian Museum (presented by G. H. Hardy).

TABANUS IMPERFECTUS, Walk.

Walker, List. Dipt. 1, p. 179 (1848); Ricardo, Ann. Macq. Nat. Hist. (8), XVI., p. 278 (1915); White, Roy. Soc. Tasmania (Papers and Proc.), 1915, p. 11.

Mr. Hardy's collection contains six specimens of this species from Hobart. Miss Ricardo states that Walker's type was from New South Wales; Walker himself, as noted by White, merely gave the habitat as New Holland, but as White has compared the Tasmanian specimens with the type, their identity is certain. I have never met with the species among the numerous specimens of *Therioptectes* I have had under examination from the mainland. The hairs are long and white on the eyes, much as in *T. antecedens*, and the large frontal callus combined with the small size will enable the species to be readily identified. In some specimens there is evidence of slight shading of the transverse veins of the wing.

TABANUS HOBARTIENSIS, White.

Roy. Soc. Tasmania, Papers and Proc., 1915, p. 13.

Specimens collected by Mr. Hardy at Hobart in December and January may belong to this species. They, however, all differ in some details from White's description; thus the forehead is slightly narrower at the vertex than anteriorly, the thoracic pubescence is golden rather than white, and the knees, though blackish, could hardly be described as "broadly black." The anal cell also is not closed right in wing margin, but is united to it by a short stem which, however, varies in length.

As the specimens are, however, from the type locality of *T. hobartiensis*, I prefer to leave them under that name until a specimen can be compared with the type.

TABANUS TASMANIENSIS, White.

White, loc. cit., p. 8.

To this species I refer five specimens taken by Mr. Hardy on Cradle Mountain, in January, 1917. They agree very well with Mr. White's description, except that the abdomen is not "unusually broad and flattened."

The eyes are densely covered with long, whitish pubescence, much as in *T. antecedens*, frontal callus broad reaching eyes on either side, without any extension. Wings with basal portions of veins and cross veins suffused brown, the same colour also occurring along the costal cell and at extreme base of wing.

A male agrees with the females; eyes contiguous, with white pubescence, facets uniform in size; frontal triangle dark grey with grey tomentum; vertex with long black hairs.

EXPLANATION OF PLATES.

PLATE I.

Pelecorrhynchus flavipennis, n. sp.

PLATE II.

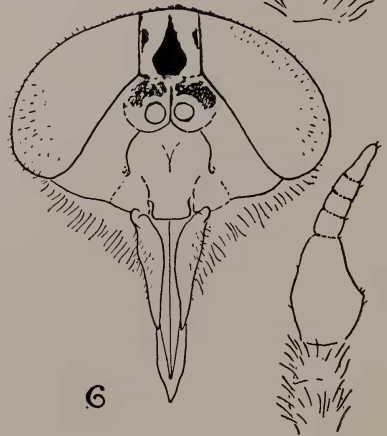
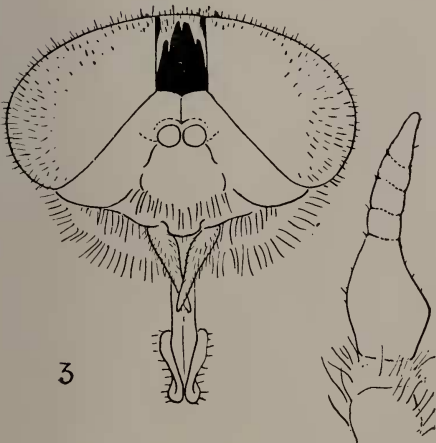
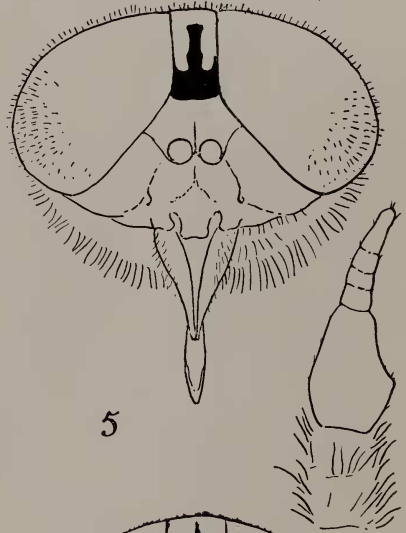
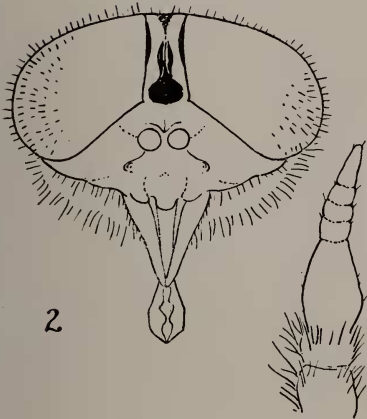
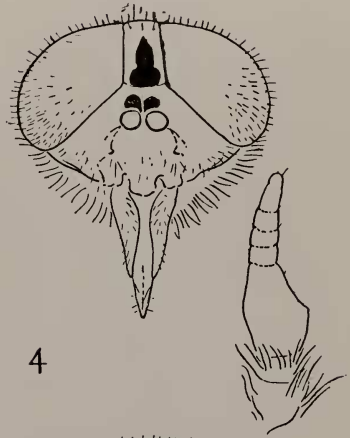
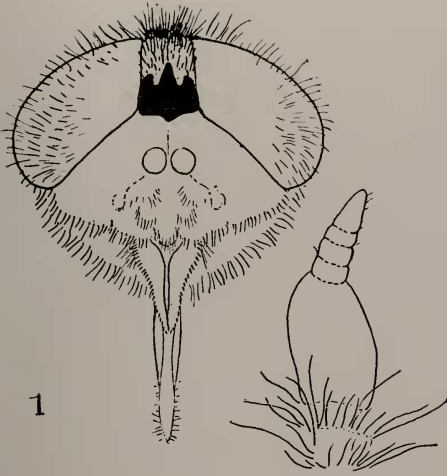
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| Fig. 1. | <i>Tabanus latifrons</i> , n. sp., | head and antenna. |
| " 2. | " <i>tasmanicus</i> , n. sp., | " " " |
| " 3. | " <i>antecedens</i> , Walk., | " " " |
| " 4. | " <i>bassii</i> , n. sp., | " " " |
| " 5. | " <i>edentulus</i> , Macq., | " " " |
| " 6. | " <i>divoni</i> , n. sp., | " " " |

Postscript (added December, 1920).—Owing to the delay in publication, additional information has become available in the case of certain of the species treated in the above paper.

Pelecorrhynchus flavipennis, n. sp.—The allied species alluded to in the notes on this species has now been described as *Pelecorrhynchus dequeti*, Hardy (Records Australian Museum, XIII., No. 1, p. 38). This may be distinguished by the different coloured thorax, and the yellow legs.

Erephopsis subcontigua, n. sp.—Additional localities, Marlee, near Wingham (C. F. Pfeiffer, Nov.-Dec., 1920); Dorrigo (T. Wright, Nov., 1920).





Parasilvius, n.g.—This genus is certainly distinct from *Palim-mecomya*, of which I have examined the genotype.

Tabanus regis-georgii, Macq.—The synonymy of this species has already been published (Proc. Linn. Soc., N.S.W., XLV., 3, 1920., p. 466).

Tabanus hobartiensis, White.—A specimen has now been compared with the type, and the identification confirmed.
